
VALIDATION REPORT

**CELTINS – Companhia de Energia Elétrica
do Estado do Tocantins**

**CEMAT – Centrais Elétricas Mato-
Grossenses S.A.**

**Celtins and Cemat grid connection of
isolated systems**

SGS Climate Change Programme

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Summary

SGS has performed a validation of the project: "Celtins and Cemat grid connection of isolated systems". The validation was performed on the basis of the UNFCCC criteria and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting. Using a risk based approach, the review of the project design documentation and the subsequent follow-up interviews have provided SGS with sufficient evidence to determine the fulfilment of the stated criteria.

The objective of the project activity is the expansion of the interconnected grid to isolated systems in the States of Mato Grosso and Tocantins – Brazil.

As a result of the interconnection, the fossil fuel power generation in the isolated systems was displaced by more efficient and less carbon intensive.

The companies Celtins and Cemat are member of the Grupo Rede.

The project uses straight grid expansion technologies; high voltage 13.8kV to 138kV.

Total amount of emission reductions estimated for the first crediting period is 551,346 tCO₂e.

The SGS will request the registration of the "Celtins and Cemat grid connection of isolated systems project" as a CDM project activity, once the written approval by the DNA of the participating Parties and the confirmation by the DNA of Brazil that the project assists in achieving sustainable development has been received.

Subject:		
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Abbreviations

AM	Approved Methodology
CAR	Corrective Action Request
CER	Certified Emission Reduction
DNA	Designated National Authority
MP	Monitoring Plan
NIR	New Information Request
PDD	Project Design Document
SGS	Société Générale de Surveillance
EF	Emission Factor

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Annex 2: Validation Protocol

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1. Introduction

1.1 Objective

The Grupo Rede has commissioned SGS to perform the validation of the project: “Celtins and Cemat grid connection of isolated systems” with regard to the relevant requirements for CDM project activities. The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, the monitoring plan (MP) and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design as documented is sound and reasonable and meets the stated requirements and identified criteria. Validation is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of Certified Emission Reduction (CER). UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities and related decisions by the COP/MOP and the CDM Executive Board.

1.2 Scope

The scope of the validation is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations. SGS has employed a risk-based approach in the validation, focusing on the identification of significant risks for project implementation and the generation of CERs.

The validation is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3 GHG Project Description

This report summarizes the results of the validation of Celtins and Cemat grid connection of isolated systems project, performed on the basis of UNFCCC criteria. The validation has been performed as a desk review of the project documents presented by Grupo Rede and a site visit, located in Cuiabá/MT and Belém/PA, Brazil. During site visit, Grupo Rede managers and Ecoinvest consultant were interviewed.

The purpose of the project activity consists of expansion of the Brazilian interconnected grid to isolated systems in the States of Mato Grosso and Tocantins. The interconnection will result in the complete displacement of the previous fossil fuel power generation in the isolated systems by more efficient, less carbon intensive.

The project is now connected to interconnected grid NNE and SSECO.

Total amount of emission reductions estimated for the first crediting period is 382,211 tCO₂e.

Baseline Scenario:

No investment in transmission lines; electricity generation from fossil-fuel thermal plants in the isolated systems.

With-project scenario:

All fossil fuel thermal plants in the isolated systems are displaced and are being connected to the national interconnected Brazilian grid.

Leakage: Following the AM0045, the deforestation in the construction of interconnection lines is considered as leakage (change of carbon stocks as a result of clearing biomass).

Environmental and social impacts:

The environmental impact of the project activity is considered small.

Regarding the compliance with environmental legislation of the host country, the Brazilian regulation requires an environmental licensing process. Documented evidences were provided during the validation. Details about the area deforested were provided (area and vegetation).

1.4 The names and roles of the validation team members

Name	Role
<i>Aurea Nardelli – SGS Brazil</i>	<i>Lead Assessor</i>
<i>Fabian Gonçalves – SGS Brazil</i>	<i>Local Assessor</i>
<i>Irma Lubrecht – SGS NL</i>	<i>Technical Reviewer</i>

2. Methodology

2.1 Review of CDM-PDD and additional documentation

The validation is performed primarily as a document review of the publicly available project documents. The assessment is performed by trained assessors using a validation protocol.

A site visit is usually required to verify assumptions in the baseline. Additional information can be required to complete the validation, which may be obtained from public sources or through telephone and face-to-face interviews with key stakeholders (including the project developers and Government and NGO representatives in the host country). These may be undertaken by the local SGS affiliate. The results of this local assessment are summarized in Annex 1 to this report.

2.2 Use of the validation protocol

The validation protocol used for the assessment is partly based on the templates of the IETA / World Bank Validation and Verification Manual and partly on the experience of SGS with the validation of CDM projects. It serves the following purposes:

- it organises, details and clarifies the requirements the project is expected to meet; and
- it documents both how a particular requirement has been validated and the result of the validation.

The validation protocol consists of several tables. The different columns in these tables are described below.

Checklist Question	Means of verification (MoV)	Comment	Draft and/or Final Conclusion
<i>The various requirements are linked to checklist questions the project should meet.</i>	<i>Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.</i>	<i>The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.</i>	<i>This is either acceptable based on evidence provided (Y), or a Corrective Action Request (CAR) due to non-compliance with the checklist question (See below). New Information Request (NIR) is used when the validation team has identified a need for further clarification.</i>

The completed validation protocol for this project is attached as Annex 2 to this report

2.3 Findings

As an outcome of the validation process, the team can raise different types of findings.

In general, where insufficient or inaccurate information is available and clarification or new information is required the Assessor shall raise a **New Information Request (NIR)** specifying what additional information is required.

Where a non-conformance arises the Assessor shall raise a **Corrective Action Request (CAR)**.

A CAR is issued, where:

- I. mistakes have been made with a direct influence on project results;
- II. validation protocol requirements have not been met; or
- III. there is a risk that the project would not be accepted as a CDM project or that emission reductions will not be verified.

The validation process may be halted until this information has been made available to the assessors' satisfaction. Failure to address a NIR may result in a CAR. Information or clarifications provided as a result of an NIR may also lead to a CAR.

Observations may be raised which are for the benefit of future projects and future verification or validation actors. These have no impact upon the completion of the validation or verification activity.

Corrective Action Requests and New Information Requests are raised in the draft validation protocol and detailed in a separate form (Annex 3). In this form, the Project Developer is given the opportunity to "close" outstanding CARs and respond to NIRs and Observations.

2.4 Internal quality control

Following the completion of the assessment process and a recommendation by the Assessment team, all documentation will be forwarded to a Technical Reviewer. The task of the Technical Reviewer is to check that all procedures have been followed and all conclusions are justified. The Technical Reviewer will either accept or reject the recommendation made by the assessment team.

3. Determination Findings

3.1 Participation requirements

CELTINS - Companhia de Energia Elétrica do Estado do Tocantins, CEMAT - Centrais Elétricas Mato-Grossenses S. A. and Ecoinvest Carbon Brasil are the project participants.

Brazil is listed as the host Party. Brazil has ratified the Kyoto Protocol on 23rd August 2002 (http://unfccc.int/files/essential_background/kyoto_protocol/application/pdf/kpstats.pdf).

At time of the validation, no Letter of Approval from the host country had been provided. The Letter of Approval will be signed when the DNA of Brazil receive and analyse the validation report.

At time of validation process, there is no Annex I parties in this project.

3.2 Baseline selection and additionality

The purpose of the project activity is the expansion of the Brazilian interconnected grid to isolated systems in the Brazilian states of Mato Grosso and Tocantins. The interconnection results in the complete displacement of the previous fossil fuel power generation in the isolated systems by more efficient, less carbon intensive power generation from the interconnected grid.

The methodology AM0045 defines specific procedures for identification of the baseline scenario. The assessment of alternative scenarios presented in the PDD (version 2) did not comply with the AM0045 requirements (the 3 steps of the methodology). CAR 8 was raised: The identification of barriers was only mentioned under section B.4 but was not discussed. This did not support the conclusion of "The presented barriers affect the Project Activity Scenario as well as all alternative scenarios similarly." It is required specify clearly which alternatives are prevented by at least one of the barriers previously identified and eliminate those alternatives from further consideration. The step 3 of the "Tool" should be used.

To address CAR 8, a revised version of the PDD was provided (version 4) , with more information of the alternative scenarios, following the steps defined by AM0045. Four scenarios were identified:

- *Project Activity Scenario*: interconnection to the grid with CDM incentive.
- *Interconnection Scenario*: project activity without the CDM incentive (also implemented at a later point in time).
- *Reference Scenario*: Grupo Rede could continue operating under the current scenario of supplying energy to isolated communities through small and medium sized diesel fuelled power plants.
- *Overhaul Scenario*: Grupo Rede could upgrade its operation in the region by revamping and replacing the existing thermal plants with the new ones utilizing best available diesel-fired technology.

The barrier analysis was complemented by investment analysis, performed as required by step 2 of the "Tool". The investment analysis compared all the scenarios identified and confirmed the baseline scenario is no investment in transmission lines, with electricity generation from fossil-fuel thermal plants in the isolated systems. CAR 8 was closed out.

The methodology requires the use of the "Tool for the demonstration and assessment of additionality".

During the desk study, a NIR (2) was raised asking additional information about the "step 0" (which is applicable for this project, as it is requesting for retroactive credits. Grupo Rede first submitted a new methodology proposal in mid 2005 but the version finally accepted for assessment at the MethPanel is the one from 28 December 2005 submitted though SGS).

It was verified that some transmission lines started the operation in June 2000 and it is not evidenced that the construction of these lines was effectively performed after 1st January 2000. It was also requested evidence that the generation of power using other energy sources than grid extension was considered and details of the investment analysis and clarification if the project activity has made use of incentives or subsidies from governmental programmes.

To close NIR 2, information about the governmental programmes was included in the PDD (version 4). The transmission lines with construction initiated either by the government or as a social counterpart in the privatization contract were excluded of the project (all lines of CELPA and some lines of CEMAT were excluded). It implied in significant changes in the PDD and reduction of the total amount of ERs estimated for the project.

Documents evidencing that the starting date of the CDM project activity falls after 1st January 2000 was provided (official documents from ANEEL (National Electricity Agency), MME (Ministry of Mines and Energy), Eletrobras (federally-owned Brazilian Power Utility) and Grupo Rede indicating the dates of deactivation of the diesel fuelled power plants; installation and operation licenses; records of work plan and budget for engineering project).

It was also provide evidence that Grupo Rede has assessed the possibility to obtain CDM incentives since mid 1999. Copy of a presentation prepared in 28 September 1999 about the risks and opportunities for Grupo Rede in the "CO₂ emission reduction market" was provided, with other references about meetings held in February 2000 to evaluate the impacts of possible CDM incentives for different projects of the Group. NIR 2 was closed out.

During the desk study, it was verified that the PDD did not follow all the steps required in the methodology to determine the additionality. The following non-conformities were identified and a CAR 9 was raised:

- Sub-step 1.(a): did not consider the alternative of the project be implemented without CDM incentives, as required by the "Tool";
- Sub-step 2 (c) and (d): were not clearly presented (the discussion of sub-step (c) was mixed with sub-step (b) and sub-step (d) was omitted.
- Sub-step 4: it was not supported by any sources of data or references.
- Sub-step 5: mentioned "barriers", but no barriers analysis was presented in the PDD.

To close out CAR 9, a new version of PDD was provided, including a complete discussion about additionality for the steps 1, 2, 4 and 5. The discussion was supported by spreadsheets with data, assumptions and calculations used for the investment analysis. References (official data from governmental agencies and literature of the electricity sector) were provided for the information mentioned in the PDD. Following the steps required by the methodology and the "tool" – mainly the investment comparison analysis using the EBITDA (Earning before interest taxes depreciation and amortization), earnings, and NPV, it was concluded that the project is additional.

3.3 Application of Baseline methodology and calculation of emission factors

The project applies correctly the approved methodology AM0045 "Grid connection of isolated electricity systems (version 1, 22 December 2006). For the calculation of the CO₂ emission coefficient of the grid "AM0045" remits to ACM0002 – "Consolidated methodology for grid-connected electricity generation from renewable sources" (version 6, 19 May 2006).

AM0045 is applicable to grid connection of isolated systems, as is the case of the Grupo Rede project. All fossil fuel fired power plants in the isolated systems are displaced. Historical data of power generation and fuel consumption in the isolated systems is available to accurately estimate the most

likely scenario in the absence of the project activity. The calculation of the project emissions, i.e., emissions for power generation in the grid that will displace off-grid power generation, is based on available official information. Copy of the spreadsheets with the data used for calculations were provided.

For the project activity, CO₂ emissions from the increase of electricity generation in power plants connected to the grid and emissions related to SF₆ used in the new equipments of the project activity have been taken into account. For the baseline determination, CO₂ emissions from electricity generation in fossil fuel fired plants in the isolated system, which are displaced by the project activity, have been considered, taking into account the increase of the demand and the remaining lifetime of the equipments. Spreadsheets with data used for calculation of the baseline emission factors were provided for analysis.

The deforestation in the construction of interconnection lines is considered as leakage (change of carbon stocks as a result of clearing biomass). Section B.6.3 of PDD mentioned that “The climatic zone of most of the project area is mostly classified as “savana arbórea aberta” according to “Brazilian National Communication”. No complete references were provided about this source. It was also mentioned that “ $L_C = 15.39 \text{ tC/ha}$ ”, but the source of this value was not provided. NIR 10 was raised.

To clarify NIR 10, the following reference was provided: “*Primeiro Inventário Brasileiro de Emissões Antrópicas de Gases de Efeito Estufa. Emissões e Remoções de Dióxido de Carbono Por Conversão de Florestas e Abandono de Terras Cultivadas. Ministério da Ciência e Tecnologia, Brasília (2006)*”. This document was verified in order to confirm the information above. According to the reference, the vegetation of the area (define by geographical coordinates) is classified under the *bioma* “Amazonia”. The sub-bioma (Savana-aberta) was classified from the environmental reports provided by the client (which characterize the vegetation under the transmission lines). NIR 10 was closed out.

3.4 Application of Monitoring methodology and Monitoring Plan

The project applied AM0045 – “Baseline and monitoring methodology - Grid connection of isolated electricity system” (version 1).

The methodology defines the data and parameters which should be defined at validation and that will be not monitored and a of parameters that should be monitored during the crediting period.

The methodology requires the monitoring of the following parameters:

- electricity generation from the project activity;
- data needed for recalculate the electricity Emission Factor, consistent with ACM0002;
- financing and institutional arrangements that could help the project to overcome identified barriers during the crediting period.

During the desk study and site visit, some issues were raised regarding the monitoring methodology and monitoring plan:

- CAR 3: it was verified that data and parameters that are available at validation (section B.6.2 of the PDD) and data and parameters monitored were not in compliance with AM0045. Version 2 of PDD had included and excluded parameters with out any justification. In addition, parameters 14 to 23 included in the PDD were highlighted on the text and their tables (with details about monitoring) had been not completed (see section B.6.2).

To close out CAR 3, a revised PDD was presented describing the parameters (to be monitored and that are available at validation) as required by the AM0045.

The calculation of EF grid was done applying the parameters defined by ACM0002. As the EF was calculated ex-ante, the parameters for this were included in the section B.6.2 ("parameters that are available at validation"). CAR 3 was closed out.

- CAR 12: The PDD version 2 did not provide complete information for the monitoring as required in the monitoring methodology and by the guidelines. Description of measurement methods and procedures were not complete. In the tables of section B.7.1 it was not specified, for example, the measurement methods, the equipment, the procedures for data collection, the calibration procedures etc for each parameter to be monitored.

A new version of PDD was provided (version 4). Additional information was included on the section B.7.1 and a reference to the regulatory requirements applicable for measurements was provided. CAR 12 was closed out.

- CAR 4: The average annual quantity of SF6 leaks in the equipments during years verified during site visit do not corresponds to the value presented in the PDD version 1. The area of land deforested in the construction of the interconnection lines verified during site visit do not corresponds to the value 130 ha presented in the PDD version 1. Additional transmission losses estimated in the PDD (1%) should be according to the data calculated by Cemat, Celpa and Celtins.

To close out CAR 4, the average annual quantity of SF6 was revised and presented in a new version of PDD (version 2). Copy of the maintenance procedure was provided and the internal system was verified. The PDD adopted a conservative 10% leakage. This data will be monitored and can be confirmed during verification process. The deforested area was confirmed from data presented in the environmental reports. The correct value was applied in the spreadsheets for calculation of the leakage. The calculation for the estimated transmission losses for CEMAT and CELTINS were presented, copy was provided to SGS. CAR 4 was closed out.

- CAR 11: Although information about the management system was verified on-site by the local assessor, the monitoring plan (section B.7.2 of the PDD) was not complete as required by the guidance. Detailed description was required, indicating the responsibilities and procedures for data collection and archiving.

A new version of PDD (version 4) was provided. It was informed that the necessary operational and management structures necessary to monitor emissions reductions and any leakage effects generated by the project activity are common practice in the operation of the Grupo Rede CDM Project. The distribution of electricity in Brazil is a government concession and is regulated by the Brazilian Electricity Agency (ANEEL - Agência Nacional de Energia Elétrica), so the measurement methods and procedures carried out at Grupo Rede CDM Project are in accordance with legal and regulatory requirements determined by ANEEL (see ANEEL, Resolução Normativa No 163, de 1o de Agosto de 2005). It was also included in the PDD that data will be collected and consolidated by the special projects department of Grupo Rede (at the headquarter of the company in São Paulo), with the support of Ecoinvest Carbon, for the preparation of the monitoring reports. The archiving time was defined as the crediting period + 2 years. CAR 11 was closed out.

3.5 Project design

The purpose of the project activity is the expansion of the Brazilian interconnected grid to isolated systems in the Brazilian states of Mato Grosso and Tocantins. The interconnection results in the complete displacement of the previous fossil fuel power generation in the isolated systems by more efficient, less carbon intensive power generation from the interconnected grid.

The project uses straight grid expansion technologies: high voltage (13.8 kV to 138 kV), high-strength composite conductors and power transformers. It is applied locally available technology which is not expected to be replaced within the crediting period. The project did not make use nor result in the diversion of ODA.

The project is requesting retroactive credits. Starting date of the project activity was 1st January 2001. The operational lifetime of the project is 30 years. A renewable crediting period of 7 years is selected, starting on 1st January 2001.

The following issues were raised during the validation, regarding the completion of the Project Design Document and compliance with the PDD CDM guidance:

- CAR 1: Section A.4.1.3 of the PDD did not include cities in the Cemat grid and the names of the cities of Tocantins State were not confirmed. The estimated amount of emission reduction over the crediting period (section A.4.4 of the PDD) did not include the cities not listed (but that are included in the project) and data verified during site visit. Section B.1 did not include the number, version and date of the methodology applied. According to the PDD version 1, the crediting period started before project activity.

To close out CAR 1, the PDD was revised. The cities were included in the section A.4.1.3 and geographical coordinates were revised. The estimated amount of emissions reduction was revised and copy of the CER calculation was provided to the validation team. It was included the information about the name and version of the methodology (AM0045 version1, 22 December 2006). The revised starting date of the crediting period was included.

- CAR 6: It was verified that the PDD version 2 (23/01/2007) did not comply with the PDD guidances. The main non-compliances identified were:
 - Section A.4.1.3 and A.4.1.4: the information was presented, but under a wrong item. The detailed location with geographical coordinates was presented under A.4.1.3 and not under A.4.1.4.
 - Section A.4.3: accordingly to the guidance, this section should include a description of how environmentally safe and sound technology, and know-how to be used, is transferred to the host Party(ies). No information about this was presented in the PDD under this header.
 - Section B.1: it was not complete. It was not informed the methodologies or tools which the approved methodology draws upon and their version.
 - Section B.8: the date of completion of the application of the baseline study and monitoring methodology was not informed.
 - Annex 2: was excluded with no justification.
 - Annex 4: it was informed that the project applies "the procedures set by the "Approved consolidated monitoring methodology ACM0002". No references to AM0045.

To close out CAR 6, a new version of PDD was provided. A clear link was included to relate the sections A.4.1.3 and A.4.1.4 (details were kept on section A.4.1.3); section A.4.3, B.1 and B.8 was completed with the information required; Annex 2 and 4 were revised.

CAR 7: The project boundary should be consistent with the approved methodology. The Section B.3 (PDD version 2), the description of the sources and gases included in the project boundary was not complete, as required by AM0045 and was not presented as required by the guidelines. Section B.3 (PDD version 3) was revised to include the information required about project boundary. CAR 7 was closed out.

3.6 Environmental Impacts

The main environmental impacts of grid extension are related to clearing-road activities and transmission line construction. It was confirmed by the local assessor that part of the transmission lines were built using existing roadways to minimize environmental impacts not demanding deforestation of areas.

The environmental studies characterizing the vegetation before the clearance, the environmental plan and the environmental licenses of the lines included in the project were verified on-site. Copies were provided to the validation team.

The licenses issued by the Mato Grosso state and Tocantins state environmental agencies evidenced that the project activity complies with the Brazilian environmental legislation.

3.7 Local stakeholder comments

The local stakeholder consultation is required by Brazilian DNA. It is necessary to invite the relevant stakeholders, before the validation process starts. During the site visit, it was verified that the stakeholders were invited by letters. Evidences that the following organizations were invited to comment on the CDM project were not available and a CAR (5) was raised:

Cemat: local communities (Claudia, União do Sul, Marcelândia, Canarana, Sapezal, Juína, Juara, Tabaporã); Prefeitura and Secretaria de Meio Ambiente (Juara); Ministério Público.

Celpa: local communities (Vizeu, Tucumã, São Félix); Câmara Vereadores (São Félix).

Celtins: local communities (Apinajé, Retiro, Lagoa do Tocantins, Mansinha, Mateiros, Trevo da Praia, Lizarda, São Félix, Centenário, Recursolândia); Câmara Vereadores (Príncipe, Mateiros).

To close out CAR 5, documented evidences were provided to SGS regarding the letters sent to the local stakeholders (copies of mail receipts). A period of 30 days was given for comments. The conclusion of the local consultation was included in the PDD (version 4). No comments were received. CAR 5 was closed out.

4. Comments by Parties, Stakeholders and NGOs

In accordance with sub-paragraphs 40 (b) and (c) of the CDM modalities and procedures, the project design document of a proposed CDM project activity shall be made publicly available and the DOE shall invite comments on the validation requirements from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available. This chapter describes this process for this project.

4.1 Description of how and when the PDD was made publicly available

The PDD and the monitoring plan for this project were made available on the SGS website <http://cdm.unfccc.int/Projects/Validation/DB/G7AVSHB98WBGVFPKRNST0LLJ16Z8CD/view.html> and were open for comments from 03 Jan 2007 until 01 Feb 2007. Comments were invited through the UNFCCC CDM homepage.

4.2 *Compilation of all comments received*

No comments were received.

4.3 *Explanation of how comments have been taken into account*

No comments were received.

5. Validation opinion

Steps have been taken to close out twelve Findings and one observation.

SGS has performed a validation of project: Grupo Rede CDM Project. The validation was performed on the basis of the UNFCCC criteria and host country criteria, as well as criteria given to provide consistent project operations, monitoring and reporting. Using a risk based approach, the validation of the project design documentation and the subsequent follow-up interviews have provided SGS with sufficient evidence to determine the fulfilment of the stated criteria.

By displacement of the previous fossil fuel power generation in the isolated systems by more efficient, less carbon intensive power generation from the interconnected grid, the project results in reducing greenhouse gas emissions that are real, measurable and give long-term benefits to the mitigation of climate change. A review of the investment analysis presented demonstrates that the proposed project activity was not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. If the project is implemented as designed, the project is likely to achieve the estimated amount of emission reductions.

The validation is based on the information made available to SGS and the engagement conditions detailed in the report. The validation has been performed using a risk based approach as described above. The only purpose of this report is its use during the registration process as part of the CDM project cycle. Hence SGS can not be held liable by any party for decisions made or not made based on the validation opinion, which will go beyond that purpose.

6. List of persons interviewed

Date	Name	Position	Short description of subject discussed
03-4/01/2007	Mituo Hirota	Consultant/Grupo Rede	Operational issues, findings, monitoring plan.
03-4/01/2007	Ricardo Esparta	Director/Ecoinvest	Validation process. Technical issues, operational issues, findings, monitoring plan, baseline, licenses.
03-4/01/2007	Antonio M. Dias	Manager/Cemat	Operational issues.
03-4/01/2007	Evandro X. Braga	Engineer/Cemat	Operational issues.
03-4/01/2007	Lutero Paes de Barros	Maintenance/Cemat	Operational issues, maintenance procedures.
03-4/01/2007	José Roberto Ferreira	Forestall Engineer	Environmental Licenses.
03-4/01/2007	Pedro Murari Neto	System Operation/Cemat	Quality procedures.
03-4/01/2007	Celso Barreto	Engineer department/Cemat	Quality procedures.
03-4/01/2007	Elisandro P. Azevedo	Comercial department/Cemat	Monitoring plan, calibration.
03-4/01/2007	Alexandre Lazarin	Engineer/Celtins	Operational issues, findings, monitoring plan.

7. Document references

Category 1 Documents (documents provided by the Client that relate directly to the GHG components of the project, (i.e. the CDM Project Design Document, confirmation by the host Party on contribution to sustainable development and written approval of voluntary participation from the designated national authority):

- /1/ Celtins and Cemat grid connection of isolated systems" (for simplicity hereafter referred to simply as the "Grupo Rede CDM Project"), version 01, 26/12/2006; version 02, 23/01/2007; version 03, 27/02/2007; version 04, 07/03/2007.
- /2/ Baseline and monitoring methodology AM0045 - "Grid connection of isolated electricity systems", Version 01.

Category 2 Documents (background documents used to check project assumptions and confirm the validity of information given in the Category 1 documents and in validation interviews):

- /3/ Grupo Rede power and CER generation spreadsheet.
- /4/ Celtins data CER calculation spreadsheet.
- /5/ Cemat data CER calculation spreadsheet.

- /6/ ANEEL deactivation resolutions (National Electricity Agency).
- /7/ Calibration certificate and Measure procedure.
- /8/ Environmental licenses: Cemat and Celtins.
- /9/ Operational procedures: Critério de Manutenção preventiva do Sistema de transmissão e Geração – PLA01; Crítica de Leitura; Fechamento do Balanço Energético.
- /10/ Brazilian Grid Emission Factor – NNE 2003-2005 (spreadsheet).
- /11/ Brazilian Grid Emission Factor – SSECO 2003-2005 (spreadsheet).
- /12/ CDM Presentation and Plan of action – February 2000.
- /13/ Investment Analysis MDL Cemat – 31/01/2007.
- /14/ Investment Analysis MDL Celtins – 31/01/2007.

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Annex 1 - Local assessment checklist – CDM.Val0833

This checklist is designed to provide confirmation of in-country data and information provided in the Project Design Document. It serves as a “reality check” on the project. It is to be completed by a local assessor from SGS Brazil

Issue	Findings	Source /Means of Verification	Further action / clarification / information required?
Confirm the location of the project activity (States and Towns included in the system).	The site visit was performed at the Cemat and Celpa office. Verified the state map what cities are included in the project (Mapa Eletrogeográfico). See CAR 1: the list of locations are not complete in the PDD version 1.	Site visit/DR/I	CAR 1
Confirm Step 0: check documented evidence about the starting date of the project. How the date: 01/06/2000 can be confirmed?	It was informed (by interviews) that the project was implemented in beginning 2000. It was not provide documented evidences that the incentive from the CDM was seriously considered and that the construction of the transmission lines (those in operation since June 2000) were constructed after January 2000. See NIR 2	Site visit/DR	NIR 2
Check if there is any regulation or regulatory requirements related to the project activity implementation (it the project required to be implemented or incentivated by governmental programmes?).	Verified during site visit and interview that there was no enforcement of legal requirements for the implementation of the project.	Site visit/DR	No

Issue	Findings	Source /Means of Verification	Further action / clarification / information required?
<p>Check details about the system BEFORE the interconnection: thermo plants, fuel consumption, energy generated in the baseline etc. Please describe the evidences collected on-site.</p>	<p>Verified the following documents:</p> <ul style="list-style-type: none"> - Internal report with oil consumption (Dados para elaboração do projeto); - Thermo plants deactivated report (Usinas desativadas 2000-2006); - ANEEL Resolution that confirm the deactivation of the thermo plants and internal deactivation report that describes the thermo plant location, equipments, interconnection date. <p>Data and parameters that are available at validation (section B.6.2 of the PDD) and Data and parameters monitored are not in compliance with AM0045.</p>	<p>Site visit/DR</p>	<p>CAR 3</p>
<p>Check and described how the Emission factors estimated take into account the increase of demand of the isolated systems and the remaining lifetime of the equipments (it is a condition for applicability of AM0045).</p>	<p>The project considers the real demand where the data are available (internal data) and for future years the data were estimated, using the data in the last year for the future. The remaining lifetime of the equipments were calculated based on internal definition. The worksheet: Credito de Carbono_Cemat/Celpa/ Celtins was provided and included these conditions.</p>	<p>Site visit/DR</p>	<p>No</p>
<p>Verified and report evidences that all fossil fuel fired power plants in the isolated system are 100% displaced (it is a condition for applicability of AM0045).</p>	<p>The evidence that the fossil fuel plants were displaced is the ANEEL resolutions (official documents informing the deactivation of each plant included in the interconnection project).</p>	<p>Site visit/DR</p>	<p>No</p>

Issue	Findings	Source /Means of Verification	Further action / clarification / information required?
Verify the investment analysis: ask for the spreadsheets with assumptions, data and formulas applied. Check evidences related to the data mentioned on these spreadsheets (as total of energy produced, EF diesel, costs, electricity prices etc).	Data used for the analysis were verified on site. Copy of the spreadsheets was provided after the site visit.	DR	NIR 2
Verify how the EF grid was calculated; check complete data used for calculations.	Copy of the EF grid calculation was provided and verified by the local assessor. Data is according to the most recent value provided by System National Operator (ONS).	DR	No
Check the deforested area mentioned in the PDD. Collect evidences about the area (from documents/maps or environmental licenses).	The deforested areas were verified on-site by reviewing of environmental licenses, technical report from environmental agency, environmental plan and map. The area informed in the PDD version 1 did not agree with the area verified from the documents above. See CAR 4.	Site visit/DR	CAR 4
Verify data used to calculate CERs (worksheets with data, formula, where data was obtained, default values).	Verified the worksheet with CERs calculation (Crédito de Carbono – Celpa/Celtins/Cemat). The monitoring data available at the validation are presented in these worksheets.	Site visit/DR	No

Issue	Findings	Source /Means of Verification	Further action / clarification / information required?
Check values applied for transmission losses.	There is no official formula or specification for calculation of the transmission losses. The value applied was calculated according internal procedure (spreadsheet: Credito de Carbono_Cemat/Celpa/Celtins). The value informed on the PDD did not agree with the value verified on-site	Site visit/DR	CAR 4
Check values of SF6 leaks	The average annual quantity of SF6 leaks in the equipments during years verified during site visit do not corresponds to the value presented in the PDD version 1. See CAR 4.	Site visit/DR	CAR 4
Described the evidences collected on-site which confirm that the proejct was installed as described in the PDD Please give details about the site visit and interviews.	All cities in this project were connected to the interconnected electricity grid until 2006. Substations with energy meter were installed where a thermoelectric was operational (isolated system). Verified the statistical information about: energy consumed in the isolated system and interconnected system; diesel consumption (official data available); date of the interconnection; lifetime of the deactivated equipments; map of the new interconnected cities. Documented evidences (official documents from ANEEL) were provided, which mention the deactivation of thermal plants of the isolated system. The site visit was performed on Cemat office (located in Cuiabá/MT and Celpa office (located in Belém/PA) where project staff and its consultant were interviewed.	Site visit/DR	Ok

Issue	Findings	Source /Means of Verification	Further action / clarification / information required?
<p>Verify on-site the management system implemented for the project activity.</p> <p>Verify details about the monitoring system, responsibilities, training of personnel etc.</p> <p>Check procedures/manuals</p>	<p>The energy meters are controlled by official governmental agency.</p> <p>The concessionaries has procedures for maintenance (verified the internal system), initial calibration/check of the meters. Documents were verified on-site.</p> <p>The energy data is collected automatically in the energy meter and sent to the internal system of each concessionary.</p>	<p>Site visit/DR/I</p>	<p>CAR 11 (section 5.2 of the validation checklist)</p>
<p>Check environmental licenses and if an EIA was required.</p> <p>Ask for copies of the licences and check conditions required by the environemtnal agencies (restoration of degraded areas?)</p>	<p>For more details, see annex 2 item 6.2 (checklist).</p> <p>Regarding Celtins: verified the installation license 1524/2006 issued by Naturatins, 16/12/2006.</p> <p>This is the license for the implementation of the transmission lines.</p> <p>Copies of the licenses were provided to SGS.</p>	<p>DR</p>	<p>Ok</p>
<p>Local stakeholder consultation: verify if it was carried out in compliance with DNA requirements.</p> <p>Check documented evidences that all relevant stakeholders were invited.</p> <p>Check the date of the consultation. Has it been completed?</p>	<p>See annex 2 section 7. and CAR 5.</p> <p>The consultation was not concluded when the on-site audit visit was carried out. Some local stakeholders had not been invited for comments. See CAR 5 details.</p>	<p>DR</p>	<p>CAR 5</p>



ANNEX 2 - VALIDATION PROTOCOL

THIS VALIDATION PROTOCOL IS DESIGNED TO ENSURE THAT THE PROJECT MEETS THE REQUIREMENTS FOR CDM PROJECTS THAT ARE DETAILED IN PARAGRAPH 37 OF THE CDM MODALITIES AND PROCEDURES. EACH REQUIREMENT IS COVERED IN A SEPARATE TABLE. THE FOLLOWING REQUIREMENTS ARE DISCUSSED IN THIS PROTOCOL:

Requirement	Description	
Participation requirements	The participation requirements as set out in Decision 17/CP.7 need to be satisfied	Covered in table 1
Baseline and monitoring methodology	The baseline and monitoring methodology complies with the requirements pertaining to a methodology previously approved by the Executive Board	Baseline methodology is covered in table 2 Monitoring methodology is covered in table 4
Additionality	The project activity is expected to result in a reduction in anthropogenic emissions by sources of greenhouse gases that are additional to any that would occur in the absence of the proposed project activity	Covered in table 3
Monitoring plan	Provisions for monitoring, verification and reporting are in accordance with relevant decisions of the COP/MOP	Covered in table 5
Environmental impacts	Project participants have submitted to the designated operational entity documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts and, if those impacts are considered significant by the project participants or the host Party, have undertaken an environmental impact assessment in accordance with procedures as required by the host Party;	Covered in table 6
Comments by local stakeholders	Comments by local stakeholders have been invited, a summary of the comments received has been provided, and a report to the designated operational entity on how due account was taken of any comments has been received;	Covered in Table 7
Other requirements	The project activity conforms to all other requirements for CDM project activities in relevant decisions by the COP/MOP and the Executive Board.	Covered in Table 8

SMALL SALE PROJECTS AND AR PROJECTS HAVE SPECIFIC REQUIREMENTS WHICH ARE COVERED IN TABLE 9-11. SMALL SCALE SSC PROJECTS HAVE SPECIAL REQUIREMENTS

WHICH MIGHT DEVIATE FROM THE REQUIREMENTS OF OTHER CDM PROJECTS. THESE REQUIREMENTS ARE TESTED IN TABLE 9. PLEASE NOTE THAT SOME QUESTIONS IN TABLE 9 OVERLAP WITH QUESTIONS IN THE OTHER TABLES. WHERE THE QUESTIONS IN TABLE 9 CONTRADICT OR OVERLAP QUESTIONS ELSEWHERE IN THE CHECKLIST, THE QUESTIONS IN TABLE 9 SHALL PREVAIL. FOR THE VALIDATION OF SMALL SCALE PROJECTS, ASSESSOR IS REQUIRED TO ADDRESS THE QUESTIONS IN TABLE 9 FIRST BEFORE STARTING WITH THE QUESTIONS IN THE OTHER TABLES.

FURTHER REMARKS ON THE USE OF THIS DOCUMENT:

- text in *italic blue* is meant as guidance for the assessor
- MoV = Means of Verification, DR= Document Review, I= Interview

This protocol should be adapted as required. For example, if the project is not a small scale project or an AR project, some tables can be deleted.

TABLE 1 PARTICIPATION REQUIREMENTS FOR CLEAN DEVELOPMENT MECHANISM (CDM) PROJECT ACTIVITIES (REF PDD, LETTERS OF APPROVAL AND UNFCCC WEBSITE)

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
1.1 The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3 and be entered into voluntarily.	DR	PDD	There is no Annex I in this project.	OK	Ok
1.2 The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof, and be entered into voluntarily	DR	PDD	No letter of approval from non Annex I, Brazil.	Send the validation report to DNA	
1.3 All Parties (listed in Section A3 of the PDD) have ratified the Kyoto protocol and are allowed to participate in CDM projects	DR	PDD UNF CC web site	Yes. Brazil ratified the protocol on 23 August 2002	Ok	Ok
1.4 The project results in reductions of GHG emissions or increases in sequestration when compared to the baseline; and the project can be reasonably shown to be different from the baseline scenario	DR	PDD	Yes. About the discussion of the baseline scenario, see item 3.3 and CAR 8	Ok	OK
1.5 Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation	DR	PDD UNF CCC	Yes, PDD was publicly available from 03 Jan	Ok	Ok

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
requirements for minimum 30 days (45 days for AR projects), and the project design document and comments have been made publicly available		web site	<p>2007 to 01 Feb 2007</p> <p>http://cdm.unfccc.int/Projects/Validation/DB/G7AV/SHB98WBGVFPKRNT/0LLJI6Z8CD/view.html</p> <p>No comments were received.</p>		
1.6 The project has correctly completed a Project Design Document, using the current version and exactly following the guidance	DR	PDD	<p>No, see also table 8 and CAR 6 raised:</p> <ul style="list-style-type: none"> - Section A.4.1.3 and A.4.1.4: the information was presented, but the detailed location with geographical coordinates was presented under A.4.1.3 and not under A.4.1.4. - Section A.4.3: accordingly to the guidance, this section should include a description of how environmentally safe and sound technology, and know-how to be used, is transferred to the host Party(ies). No information about this was presented in the PDD under this header. - Section B.1: It was not informed the methodology or tools which the approved methodology draws upon and their version. - Section B.8: the date of completion of the application of the baseline study and monitoring methodology was not informed. - Annex 2: was excluded with no justification. - Annex 4: it was informed that the project applies "the procedures set by the "Approved consolidated monitoring 	CAR 6	OK

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
			methodology ACM0002". No references to AM0045. A new version of PDD was provided (Ref.1). A link was included to relate the sections A.4.1.3 and A.4.1.4 (details were kept on section A.4.1.3); section A.4.3, B.1 and B.8 was completed with the information required; Annex 2 and 4 were revised. <u>CAR 6 was closed out.</u>		
1.7 The project shall not make use of Official Development Assistance (ODA), nor result in the diversion of such ODA	DR	PDD	The project does not made use of ODA.	Ok	Ok
1.8 For AR projects, the host country shall have issued a communication providing a single definition of minimum tree cover, minimum land area value and minimum tree height. Has such a letter been issued and are the definitions consistently applied throughout the PDD?			N/A		
1.9 Does the project meet the additional requirements detailed in: Table 9 for SSC projects Table 10 for AR projects Table 11 for AR SSC projects			N/A		
1.10 Is the current version of the PDD complete and does it clearly reflect all the information presented during the validation assessment.	DR	PDD	Yes, the current version was used.	Ok	Ok
1.11 Does the PDD use accurate and reliable information that can be verified in an objective manner?	DR	PDD	No, NIR 10 was raised: Section B.6.3. mentioned that "The climatic zone of most of the project area is mostly classified as "savana arbórea aberta" according to <u>Brazilian National Communication</u> ". No complete references were provided about this source. It was also	NIR 10	Ok

REQUIREMENT	MoV	Ref	Comment	Draft finding	Concl
			<p>mentioned that " $L_C = 15.39 \text{ tC/ha}$", but the source of this value was not provided.</p> <p>The following reference was mentioned on the revised PDD: "<i>Primeiro Inventário Brasileiro de Emissões Antrópicas de Gases de Efeito Estufa. Emissões e Remoções de Dióxido de Carbono Por Conversão de Florestas e Abandono de Terras Cultivadas. Ministério da Ciência e Tecnologia, Brasília (2006)</i>". This document was verified in order to confirm the information above. According to the reference, the vegetation of the area (defined by geographical coordinates) is classified under the bioma "Amazonia". The sub-bioma (Savana-aberta) was classified from the environmental reports provided by the client (which characterize the vegetation under the transmission lines). <u>NIR 10 was closed out.</u></p>		

TABLE 2 BASELINE METHODOLOGY(IES) (REF: PDD SECTION B AND E AND ANNEX 3 AND AM)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
2.1 Does the project meet all the applicability criteria listed in the methodology	PDD AM00 45	DR	Yes. The project activity consists in the expansion of an interconnected electricity grid to isolated system in the states of	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			<p>Mato Grosso, Tocantins and Pará.</p> <p>Verified the displacement of power generation in isolated systems (thermo plants using diesel) by more efficient, less carbon intensive power generation from the interconnected grid.</p> <p>It was confirmed by reviewing of official documents issued by ANEEL, where the date, name, capacity and location of each plant displaced could be checked (Ref. 6).</p>		
2.2 Is the project boundary consistent with the approved methodology	PDD AM0 045	DR	<p>No, <u>CAR 7 was raised</u>: The Section B.3 (PDD version 2), the description of the sources and gases included in the project boundary was not consistent with AM0045 and was not presented as required by the guidance. Section B.3 (PDD version 3) was revised to include the information required by AM0045 about project boundary (physical limits and sources and gases). The emissions in the baseline (Power generation) include only CO₂, the main emission source. The project activity emissions include CO₂ (from power generation) and emissions related to SF₆ used in the new equipments of the project activity</p> <p><u>CAR 7 was closed out.</u></p>	CAR 7	Ok
2.3 Are the baseline emissions determined in accordance with the methodology described	PDD AM0 045	DR	<p>Yes, the baseline emissions = baseline emission factor * electricity</p>	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			supplied to the isolated area (now connected to the interconnected system).		
2.4 Are the project emissions determined in accordance with the methodology described	PDD AM0 045	DR	<p>The formula presented in the PDD is correct.</p> <p>The project calculated the emission factor of the grid (EF-NNE and EF-SSECO grids) (Ref. 10 and 11), the emissions related to SF6 and than the project emissions.</p> <p><u>CAR 4:</u> The average annual quantity of SF6 leaks in the equipments during years verified during site visit do not corresponds to the value presented in the PDD version 1.</p> <p>The average annual quantity of SF6 was revised in the PDD version 2, copy of the maintenance procedure was provided and the internal system was verified. <u>CAR 4 was closed out</u> (see also other issues under CAR 4 below)</p>	CAR 4	Ok
2.5 Is the leakage of the project activity determined in accordance with the methodology described	PDD AM0 045	DR	<p>The formula is correct, leakage = deforested area * carbon stock per unit area.</p> <p><u>CAR 4:</u> The value applied for the deforested area mentioned in the PDD did not comply with the data about area verified on-site (from the environmental studies).</p> <p>PDD and the spreadsheets were revised. The deforested area was confirmed by the environmental reports.</p>	CAR 4	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			<u>CAR 4 was closed out</u> (see also other issues under CAR 4 above).		
2.6 Are the emission reductions determined in accordance with the methodology described	PDD AM0 045	DR	Formulas described in PDD comply with the methodology. Verified how the data presented in the PDD were calculated (spreadsheets with formulas and assumptions were provided, Ref. 4 and 5).	Ok	Ok

Table 3 Additionality (Ref: PDD Section B3 and AM)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
3.1 Does the PDD follow all the steps required in the methodology to determine the additionality	PDD AM0 045	DR	<p>No, <u>CAR 9 was raised</u>: The PDD version 2 did not follow all the steps required in the methodology to determine the additionality.</p> <ul style="list-style-type: none"> - Sub-step 1.(a): did not consider the alternative of the project be implemented without CDM incentives, as required by the "Tool"; - Sub-step 2 (c) and (d): were not clearly presented (the discussion of sub-step (c) was mixed with sub-step (b) and sub-step (d) was omitted. - Sub-step 4: it was not supported by any sources of data or references. - Sub-step 5: mentioned "barriers", but no barriers analysis was presented in the PDD. <p><u>CAR 9 was closed out</u>: A new version of PDD was provided, including a discussion about</p>	CAR 9	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			additionality for the steps 1, 2, 4 and 5. See NIR 2 about step 0.		
3.2 Is the discussion on the additionality clear and have all assumptions been supported by transparent and documented evidence	PDD	DR	<p>This project started the validation process when submitting a new methodology NM-152 on 28 December 2005, now approved as AM0045).</p> <p><u>NIR 2 was raised</u>: it was not provide evidence for the Step 0 of the "Tool". Some transmission lines started the operation in June 2000. It is not evidenced that the construction of these lines was effectively performed after 1st January 2000.</p> <p>It was not provide evidence that the generation of power using other energy sources than grid extension was considered.</p> <p>It was not provide copy of the spreadsheets used for investment analysis.</p> <p>It should be clarify if the project activity has made use of incentives or special financing from "Luz para todos" or BNDES.</p> <p>- Clarify what was the EF applied for diesel. Two different values were verified on the spreadsheets provided: 2.68 tCO₂/m³ and 2.75 tCO₂/m³.</p> <p><u>NIR closing out details</u>: - evidence that the generation of power using other energy sources than grid extension was considered.</p>	NIR 2 CAR 9	Ok Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			<p>- copy of the spreadsheets used for investment analysis was provided (Ref. 13 and 14).</p> <p>- Information about the governmental programmes was included in the PDD.</p> <p>- It was confirmed that the EF applied for diesel is: 2.68 tCO₂/m³.</p> <p>Version 4 of the PDD was provided. The additional information provided implied in the exclusion of the project the lines of CELPA and some lines of CEMAT which did not comply fully with the additionality criteria. It also implied in significant changes in the PDD and reduction of the total amount of ERs estimated for the project. NIR 2 was closed out.</p> <p>See also CAR 9 details (item 3.1 above).</p>		
3.3 Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	PDD AM0 045	DR	<p>No, <u>CAR 8 was raised</u>: the assessment of alternative scenarios presented in the PDD version 2 did not comply with the AM0045 requirements (see the 3 steps of the methodology). The identification of barriers was only mentioned under section B.4 but was not discussed.</p> <p>The discussion presented did not support the conclusion of "The presented barriers affect the Project Activity Scenario as well as all</p>	CAR 8	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			<p>alternative scenarios similarly." It is required specify clearly which alternatives are prevented by at least one of the barriers previously identified and eliminate those alternatives from further consideration. The step 3 of the "Tool" should be used.</p> <p>Version 4 of the PDD was provided, with more information of the alternative scenarios, following the steps defined by AM0045. Four scenarios were identified. The barrier analysis was complemented by investment analysis (ref. 13 and 14), performed as required by step 2 of the "Tool". The investment analysis compared all the scenarios identified and confirmed the baseline scenario as the current situation. <u>CAR 8 was closed out.</u></p>		
3.4 Is it demonstrated/justified that the project activity itself is not a likely baseline scenario	PDD	DR	No, see CAR 8 above. CAR 8 closing out information is detailed above.	CAR 8	Ok

Table 4 Monitoring methodology (PDD Section D and AM)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
4.1 Does the project meet all the applicability criteria listed in the monitoring methodology	PDD AM0 045	DR	Yes	Ok	Ok
4.2 Does the PDD provide for the monitoring of the baseline emissions as required in the monitoring methodology	PDD AM0 045	DR	No, <u>CAR 3 was raised</u> : Data and parameters that are available at validation (section B.6.2 of the PDD) and Data	CAR 3	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			<p>and parameters monitored are not in compliance with AM0045.</p> <p>PDD version 2 was verified. The parameters mentioned did not comply in full with those parameters required by the methodology as “data and parameters not monitored”. Some of them were included and other excluded, with out any justification. In addition, parameters 14 to 23 included in the PDD are highlighted in red on the text and their tables have been not completed (see section B.6.2).</p> <p>A new version of PDD was provided. The version 3 described the parameters (to be monitored and that are available at validation) as required by the AM0045. The calculation of EF grid was done applying the parameters defined by ACM0002. As the EF was calculated ex-ante, the parameters for this were included in the section B.6.2 (“parameters that are available at validation”). <u>CAR 3 was closed out.</u></p>		
4.3 Does the PDD provide for the monitoring of the project emissions as required in the monitoring methodology	PDD AM0 045	DR	<u>See CAR 4 and closing out details on itens 2.4 and 2.5</u>	CAR 4	Ok
4.4 Does the PDD provide for the monitoring of the leakage as required in the monitoring methodology	PDD AM0 045	DR	<u>See CAR 4 and closing out details on itens 2.4 and 2.5</u>	CAR 4	Ok
4.5 Does the PDD provide for Quality Control (QC) and Quality Assurance (QA)	PDD	DR	Yes.	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
Procedures as required in the monitoring methodology	AM0 045				

Table 5 Monitoring plan (PDD Annex 4)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
5.1 Monitoring of Sustainable Development Indicators/ Environmental Impacts					
5.1.1 Does the monitoring plan provide the collection and archiving of relevant data concerning environmental, social and economic impacts?	PDD AM0 045	DR	The methodology does not require the monitoring of environmental or social indicators.	Ok	Ok
5.1.2 Is the choice of indicators for sustainability development (social, environmental, economic) reasonable?	PDD	DR	It is expected that the project will contribute to sustainable development: reducing the local air pollution, lowering the risk of diesel use, supplying electricity for the communities.	Ok	Ok
5.1.3 Will it be possible to monitor the specified sustainable development indicators?	PDD	DR	Not applicable.	Ok	Ok
5.1.4 Are the sustainable development indicators in line with stated national priorities in the Host Country?	PDD	DR	Not applicable.	Ok	Ok
5.2 Project Management Planning					
5.2.1 Is the authority and responsibility of project management clearly described?	PDD	I	Verified on-site that the engineering corporative department is responsible for all project information obtained from Cemat, Celpa and Celtins. This department is responsible for sending the information to the consultant responsible for the CDM project.	Ok	Ok
5.2.2 Is the authority and responsibility for	PDD	DR	No, <u>CAR 11 was raised</u> :	CAR	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
registration, monitoring, measurement and reporting clearly described?		I	<p>Although information about the management system was verified on-site by the local assessor, the monitoring plan (section B.7.2 of the PDD) was not complete. PDD version 4 included the following information:</p> <ul style="list-style-type: none"> - All necessary operational and management structures necessary to monitor emissions reductions and any leakage effects generated by the project activity are common practice in the operation of the Grupo Rede CDM Project. Furthermore, distribution of electricity in Brazil is a government concession and is regulated by the Brazilian Electricity Agency (ANEEL acronym from the Portuguese “Agência Nacional de Energial Elétrica”). Measurement methods and procedures carried out at Grupo Rede CDM Project are in accordance with legal and regulatory requirements determined by ANEEL (see ANEEL, Resolução Normativa No 163, de 1o de Agosto de 2005).” It was also included that data will be collected and consolidated by the special projects department of Grupo Rede (at the headquarter of the company in São Paulo), with the support of Ecoinvest Carbon, for the preparation of the monitoring reports. The 	11	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			archiving time was defined as the crediting period + 2 years. <u>CAR 11 was closed out.</u>		
5.2.3 Are procedures identified for training of monitoring personnel?	PDD	I	Verified by interviews that the project is part of the Cemat, Celpa and Celtins activities. There are qualified personnel to perform monitoring activities.	Ok	Ok
5.2.4 Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	PDD	DR	No unintended emissions are expected.	Ok	Ok
5.2.5 Are procedures identified for calibration of monitoring equipment?	PDD	DR	The following procedures were verified during the site visit (Ref. 9): Cemat: CCEE procedure (Electric Energy Commercialization Chamber) is applied. The meters installed are Saga 1000, class 0,5. When the time of the interconnection new meters were installed. Celtins: the meters were calibrated according to INMETRO (National Institute of Metrology) standards. Celpa: operators are responsible to check any problem in the meters installed through the meter data. At the time of the installation the meters were checked internally (maintenance department), after installation the meters are not calibrated, in case of problem the meter is substituted.	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
5.2.6 Are procedures identified for maintenance of monitoring equipment and installations?	PDD	DR	<p>In Cemat and Celtins - the maintenance department is responsible for the maintenance of the monitoring equipment and installations.</p> <p>The following documented procedures were verified (Ref.9): PI 0MMF01, Maintenance schedule, PI 02029, PI 2DIJ05, DGM-System (internal maintenance system). Verified in details the maintenance records of Cemat and it was not found any change in the meters or SF6 reposition (leakage) during period 2002-2006.</p>	Ok	Ok
5.2.7 Are procedures identified for monitoring, measurements and reporting?	PDD	DR	<p>The monitoring system required by the CDM project is part of the operational system of each concessionary (Cemat and Celtins). The energy data is generated automatically, there is no manual operation. All data is registered in the internal system: monthly report (Cemat) and monthly invoices (Celtins).</p> <p>Verified the operational instruction: Manual de Engenharia 3.1.3-PI-01.17/PI-01-01.26; Crítica de Leitura (see Ref.9).</p>	Ok	Ok
5.2.8 Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	PDD	DR/I	<p>Verified on-site that the monitored data is controlled by the Department of Operation Systems. Verified the monthly consolidated report ("Boletim estatístico").</p> <p>About data archiving, see</p>	See CAR 11	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			also CAR 11 losing out details on 5.2.2. CDM data and records should be archived for + 2 years after the end of the crediting period.		
5.2.9 Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?	PDD	I	As verified on-site, the systems operation department is responsible to check the energy data in all project locations (energy substation). The energy is verified in each check point in the interconnected grid (inside project boundary) to be sure that the official data obtained from the meter installed in the substation is correct.	Ok	Ok
5.2.10 Are procedures identified for review of reported results/data?	PDD	I	Verified during the site visit that there is person responsible for check the data provided by system operation department and commercial department.	Ok	Ok
5.2.11 Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	PDD	I	The management and review of data will be responsibility of Grupo Rede, with support of a specialized CDM consultant.	CAR 11	Ok
5.2.12 Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	PDD	I	See CAR 11: Data are verified internally and by the consultant company contracted.	CAR 11	Ok
5.2.13 Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	PDD	I	The data are checked internally (Celtins and Cemat) and by the consultant company contracted for the CDM project.	CAR 11	Ok

Table 6 Environmental Impacts (Ref PDD Section F and relevant local legislation)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
6.1 Has an analysis of the environmental impacts of the project activity been sufficiently described?	PDD	DR	The following information and documents were verified on-site (see Ref.8): - Cemat: an environmental analysis was presented (mainly related to deforestation area). - Celtins: verified that the analysis of environmental impacts were not required.	Ok	Ok
6.2 Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	PDD	DR	Cemat: To obtain the license EIA was not required, verified the environmental plan and environmental licenses. Celtins: licence from the State Environmental agency was provided	Ok	Ok
6.3 Will the project create any adverse environmental effects?	PDD	DR	No adverse environmental effects had been identified. The deforestation (around 800 ha) were assessed before and the clearance was authorized by the environmental agencies of the states Mato Grosso and Tocantins. Most of the areas were covered by secondary vegetation. (see Ref.8)	Ok	Ok
6.4 Are transboundary environmental impacts considered in the analysis?	PDD	DR	No transboundary environmental impacts had been identified.	Ok	Ok
6.5 Have identified environmental impacts been addressed in the project design?	PDD	DR	No significant environment impacts had been identified.	Ok	Ok
6.6 Does the project comply with environmental legislation in the host country?	PDD	DR	Yes, it was confirmed by the licences presented.	Ok	Ok

Table 7 Comments by local stakeholders (Ref PDD Section G)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
7.1 Have relevant stakeholders been consulted?	PDD/ Lette rs	DR	<p><u>CAR 5</u>: The local stakeholder consultation is required by Brazilian DNA. It is necessary to send a letter to relevant stakeholders, before the validation process starts, if some letter is sent during validation process it is necessary to wait the 30 days period. Evidences that the following organizations were invited to comment on the CDM project were not provided:</p> <p>Cemat, local communities (Claudia, União do Sul, Marcelândia, Canarana, Sapezal, Juína, Juara, Tabaporã); Prefeitura and Secretaria de Meio Ambiente (Juara); Ministério Público.</p> <p>Celipa, local communities (Vizeu, Tucumã, São Félix); Câmara Vereadores (São Félix).</p> <p>Celtins, local communities (Apinajé, Retiro, Lagoa do Tocantins, Mansinha, Mateiros, Trevo da Praia, Lizarda, São Félix, Centenário, Recursolândia); Câmara Vereadores (Príncipe, Mateiros).</p> <p>To close out CAR 5, letters were sent to the local stakeholders in January and beginning February 2007. Documented evidences were provided to SGS. A period of 30 days was given for comments. The</p>	CAR 5	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			conclusion of the local consultation was included in the PDD. No comments were received. <u>CAR 5 was closed out.</u>		
7.2 Have appropriate media been used to invite comments by local stakeholders?	PDD/ Letters	DR	Yes, verified the letters sent in local language to local stakeholders.	Ok	OK
7.3 If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	PDD	DR	No. See CAR 5.	CAR 5	OK
7.4 Is a summary of the stakeholder comments received provided?	PDD	DR	No. See CAR 5 (the consultation was not completed when the version 1 of PDD was issued. It was included in the PDD version 3. <u>CAR 5 was closed out.</u>	CAR 5	Ok
7.5 Has due account been taken of any stakeholder comments received?	PDD	DR	No. See CAR 5 (the consultation was not completed when the version 1 of PDD was issued. After 30 days of consultation, no comments had been received. <u>CAR 5 was closed out.</u>	CAR 5	OK

TABLE 8 OTHER REQUIREMENTS

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
8.1 Project Design Document					
8.1.1 Editorial issues: does the project correctly apply the PDD template and has the document been completed without modifying/adding headings or logo, format or font.	PDD	DR	See CAR 6 details on 8.1.2 below.	CAR 6	Ok
8.1.2 Substantive issues: does the PDD address all the specific requirements	PDD	DR	<u>CAR 1</u> : Section A.4.1.3 of the PDD did not include	CAR	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
under each header. If requirements are not applicable / not relevant, this must be stated and justified			<p>cities in the Cemat grid and the name of the cities of Tocantins State were not confirmed.</p> <p>The estimated amount of emission reduction over the crediting period (section A.4.4 of the PDD) did not include the cities not listed (but that are included in the project) and data verified during site visit.</p> <p>Section B.1 did not include the number, version and date of the methodology applied.</p> <p>According to the PDD version 1, the crediting period started before project activity.</p> <p>Verified the PDD version 2:</p> <ul style="list-style-type: none"> - Cities were included in the section A.4.1.3 and geographical coordinates were revised. - The estimated amount of emissions reduction was revised and copy of the CER calculation was provided. The PDD version presents the cities not included in the PDD version 1. - It was included the information, methodology AM0045 version1, 22 December 2006. - Revised starting date of the crediting period: 01/06/2000. <p><u>CAR 1 was closed out.</u></p> <p>The issues raised in CAR 1 had been addressed in the version 2 of the PDD, but new issues related to the PDD template and</p>	1 CAR 6	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			<p>requirements were identified in the version 2. <u>CAR 6 was raised:</u></p> <ul style="list-style-type: none"> - Section A.4.1.3 and A.4.1.4: the information was presented, but under a wrong item. The detailed location with geographical coordinates was presented under A.4.1.3 and not under A.4.1.4. - Section A.4.3: accordingly to the guidelines, this section should include a description of how environmentally safe and sound technology, and know-how to be used, is transferred to the host Party(ies). No information about this was presented in the PDD under this header. - Section B.1: is not complete. It was not informed the methodologies or tools which the approved methodology draws upon and their version. - Section B.8: the date of completion of the application of the baseline study and monitoring methodology was not informed. - Annex 2: was excluded with no justification. - Annex 4: it was informed that the project applies "the procedures set by the "Approved consolidated monitoring methodology ACM0002". No references to AM0045. <p>A new version of PDD was provided (version 3). A</p>		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			link was included between the two sections to relate the sections A.4.1.3 and A.4.1.4 (details were kept on section A.4.1.3); section A.4.3, B.1 and B.8 was completed with the information required; Annex 2 and 4 were revised. <u>CAR 6 was closed out.</u>		
8.2 Technology to be employed					
8.2.1 Does the project design engineering reflect current good practices?	PDD	DR Visit I	Yes.	Ok	Ok
8.2.2 Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	PDD	DR Visit I	No.	Ok	Ok
8.2.3 Is the project technology likely to be substituted by other or more efficient technologies within the project period?	PDD	DR Visit I	It is not expected.	Ok	Ok
8.2.4 Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	PDD	DR Visit I	No, the project is part of the operational system of the Cemmat, Celpa and Celtins.	Ok	Ok
8.3 Duration of the Project/ Crediting Period					
8.3.1 Are the project's starting date and operational lifetime clearly defined and reasonable?	PDD	DR	Project starting date: 01/01/2001 Operational lifetime: 30 years	Ok	Ok
8.3.2 Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max. two x 7 years or fixed crediting period of max. 10 years)?	PDD	DR	Renewable crediting period: 7 years.	Ok	Ok
8.3.3 Does the project's operational lifetime exceed the crediting	PDD	DR	Yes.	Ok	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
period					

TABLE 9 ADDITIONAL REQUIREMENTS FOR SSC PROJECTS - NA
TABLE 10 ADDITIONAL REQUIREMENTS FOR AR PROJECTS - NA
TABLE 11 ADDITIONAL REQUIREMENTS FOR SSC AR PROJECTS - NA
TABLE 12 ADDITIONAL INFORMATION TO BE VERIFIED BY LOCAL ASSESSORS / SITE VISIT

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
Confirm the location of the project activity (States and Towns included in the system).	PDD	S DR	The site visit was performed at the Cemat and Celpa office. Verified the state map what cities are included in the project (Mapa Eletrogeográfico). See CAR 1: the list of locations are not complete in the PDD version 1.	CAR 1	Ok
Confirm Step 0: check documented evidence about the starting date of the project. How the date: 01/06/2000 can be confirmed?	PDD AM0 045	S DR I	It was informed (by interviews) that the project was implemented in beginning 2000. It was not provide documented evidences that the incentive from the CDM was considered and that the construction of the transmission lines (those in operation since June 2000) were constructed after January 2000. See NIR 2	NIR 2	Ok
Check if there is any regulation or regulatory requirements related to the project activity implementation	PDD	S DR	Verified during site visit and interview that there was no enforcement of legal requirements for the implementation of the project.	Ok	Ok
Check details about the system BEFORE the interconnection: thermo plants, fuel consumption, energy	PDD	S DR	Verified the following documents:	See CAR	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
generated in the baseline etc. Please describe the evidences collected on-site.			<ul style="list-style-type: none"> - Internal report with oil consumption (Dados para elaboração do projeto); - Thermo plants deactivated report (Usinas desativadas 2000-2006); - ANEEL Resolution that confirm the deactivation of the thermo plants and internal deactivation report that describes the thermo plant location, equipments, interconnection date (Ref. 6). <p>See CAR 3: Data and parameters that are available at validation (section B.6.2 of the PDD) and Data and parameters monitored are not in compliance with AM0045</p>	3	
Check and described how the Emission factors estimated take into account the increase of demand of the isolated systems and the remaining lifetime of the equipments (it is a condition for applicability of AM0045).	AM0045	S DR	The project considers the real demand where the data are available (internal data) and for future years the data were estimated, using the data in the last year for the future. The remaining lifetime of the equipments were calculated based on internal definition. The worksheet: Credito de Carbono_Cemat/ Celtins was provided and included these conditions (Ref. 13 and 14).	Ok	Ok
Verify and report evidences that all fossil fuel fired power plants in the isolated system are 100% displaced (it is a condition for applicability of AM0045).	AM0045	DR	The evidence that the fossil fuel plants were displaced is the ANEEL resolutions (Ref. 6: official documents informing the deactivation of each plant included in the interconnection project).	Ok	Ok
Verify the investment analysis: ask for the spreadsheets with assumptions, data		DR I	Data used for the analysis were verified on site.	NIR 2	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
and formulas applied. Check evidences related to the data mentioned on these spreadsheets (as total of energy supplied, EF diesel, costs, electricity prices etc).			Copy of the spreadsheets was provided after the site visit and data and formulas were checked (Ref. 13 and 14).		
Verify how the EF grid was calculated; check complete data used for calculations.	AM0 045 ACM 0002 PDD	DR	Copy of the EF calculation was provided and verified by the local assessor (ref. 10 and 11). Data is according to the most recent value provided by System National Operator (ONS).	Ok	Ok
Check the deforested area mentioned in the PDD. Collect evidences about the area (from documents/maps or environmental licenses).	PDD	S DR	The deforested areas were verified on-site by reviewing of environmental licenses, technical report from environmental agency, environmental plan and map. The area informed in the PDD version 1 did not agree with the area verified from the documents above. See CAR 4.	CAR 4	Ok
Verify data used to calculate CERs (worksheets with data, formula, where data was obtained, default values).	PDD AM0 045	DR	Verified the worksheet with CERs calculation (Crédito de Carbono – Celtins/Cemat; Ref. 3). The monitoring data available at the validation are presented in these worksheets.	Ok	Ok
Check values applied for transmission losses.	PDD	DR	There is no official formula or specification for calculation of the transmission losses. The value applied was calculated according internal procedure (spreadsheet: Credito de Carbono_Cemat/Celtins). The value informed on the	CAR 4	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			PDD did not agree with the value verified on-site.		
Check values of SF6 leaks	PDD AM0 045	DR	The average annual quantity of SF6 leaks in the equipments during years verified during site visit do not corresponds to the value presented in the PDD version 1. See CAR 4.	CAR 4	Ok
Described the evidences collected on-site which confirm that the proejct was installed as described in the PDD (describe the site visit: where you visited? The company office, in what city etc. The control room of the interconnected system? The site, where the lines were installed? Please give details about the site visit and interviews.	PDD	S DR I	All cities in this project were connected to the interconnected electricity grid until 2006. Substations with energy meter were installed where a thermoelectric was operational (isolated system). Verified the statistical information about: energy consumed in the isolated system and interconnected system; diesel consumption (official data available); date of the interconnection; lifetime of the deactivated equipments; map of the new interconnected cities. Documented evidences (official documents from ANEEL) were provided, which mention the deactivation of thermal plants of the isolated system. The site visit was performed on Cemat office (located in Cuiabá/MT and Celpa office (located in Belém/PA) where project staff and its consultant were interviewed.	Ok	Ok
Verify on-site the management system implemented for the project activity.	PDD	S DR	The energy meters are controlled by official	See CAR	Ok

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
<p>Verify details about the monitoring system, responsibilities, training of personnel etc.</p> <p>Check procedures/manuals</p>		I	<p>governmental agency.</p> <p>The concessionaries has procedures for maintenance (verified the internal system), initial calibration/check of the meters. Documents were verified on-site.</p> <p>The energy data is collected automatically in the energy meter and sent to the internal system of each concessionary.</p>	11	
<p>Check environmental licenses and if an EIA was required.</p> <p>Ask for copies of the licences and check conditions required by the environmental agencies (restoration of degraded areas?)</p>		DR	<p>For more details, see annex 2 item 6.2 (checklist).</p> <p>Regarding Celtins: verified the installation license 1524/2006 issued by Naturatins, 16/12/2006.</p> <p>This is the license for the implementation of the transmission lines.</p> <p>Copies of the licenses were provided to SGS.</p>	Ok	Ok
<p>Local stakeholder consultation: verify if it was carried out in compliance with DNA requirements.</p> <p>Check documented evidences that all relevant stakeholders were invited.</p> <p>Check the date of the consultation. Has it been completed?</p>		DR I	<p>See annex 2 section 7. and CAR 5.</p> <p>The consultation was not concluded when the on-site audit visit was carried out. Some local stakeholders had not been invited for comments. See CAR 5 details.</p>	CAR 5	Ok

Annex 3 - FINDINGS OVERVIEW

Findings from validation of – CDM.Val0833

Each Table below represents a finding from the validation assessment. The findings are numbered consecutively, approximately in the order that they have been identified.

Description of table:

Type	Findings are either New Information Requests (NIR) or Corrective Action Requests (CAR). CARs are items that must be addressed before a project can receive a recommendation for registration. NIRs may lead to the raising of CARs. Observations are included at the end and may or may not be addressed. They are primarily to act as signposts for the verifying DOE.
Issue	Details the content of the finding
Ref	refers to the item number in the Validation Protocol
Response	Please insert response to finding, starting with the date of entry.

Rows for comments and further response will be appended to the table until the Findings has been addressed to the satisfaction of the Lead Assessor.

Please note that this is an open list and more findings may be added as validation progresses.

Date: 05/01/2007

Raised by: Fabian Gonçalves

No.	Type	Issue	Ref
1	CAR	Section A.4.1.3 of the PDD did not include cities in the Cemat grid and the name of the cities of Tocantins State were not confirmed. The estimated amount of emission reduction over the crediting period (section A.4.4 of the PDD) did not include the cities not listed (but that are included in the project) and data verified during site visit. Section B.1 did not include the number, version and date of the methodology applied. According to the PDD version 1, the crediting period started before project activity.	8.1.2

Date: 23/01/2007 – comments by A. R. J. Esparta

- To review section A.4.1.3 of the PDD to include cities in the Cemat grid and confirm the name and geographical coordinates in the cities of Tocantins State. Tables reviewed.
- To review the estimated amount of emission reduction over the crediting period (section A.4.4 of the PDD). To include cities not listed and data verified during site visit. The tables are reviewed; spreadsheets with the complete calculations provided to the DOE.
- To include the number, version and date of the methodology under section B.1 of the PDD. Information included in the new PDD version.
- To review the starting date of the crediting period, according to the PDD version 1, the crediting period started before project activity. Both are set to the same day: 01/06/2000.

Date: 31/01/2007 - Fabian Gonçalves

[Acceptance and close out] Verified the PDD version 2:

- Cities were included in the section A.4.1.3 and geographical coordinates were revised.
- The estimated amount of emissions reduction was revised and copy of the CER calculation was provided. The PDD version presents the cities not included in the PDD version 1 but that are included in the project.

- It was included the information, methodology AM0045 version1, 22 December 2006.
- The revised starting date of the crediting period was included: 01/06/2000.

CAR 1 was closed out.

Date: 05/01/2007

Raised by: Fabian Gonçalves

No.	Type	Issue	Ref
2	NIR	<p>Additionality discussion: it was not provide evidence that the incentive from the CDM was seriously considered (Step 0 of the "Tool").</p> <p>It was not provide evidence that the generation of power using other energy sources than grid extension was considered.</p> <p>It was not provide copy of the spreadsheets used for investment analysis.</p>	3.2

Date: 24/01/2007 – comments by A. R. J. Esparta

Documental evidence and additionality analysis is being consolidated and will be sent soon to the validation team.

Date: 03/02/2007 – comments by A. R. J. Esparta

Additionality information reviewed in the PDD. Evidences of CDM consideration before project start supplied. Investment analysis worksheets sent.

Date: 02/03/2007 - comments by A. R. J. Esparta

New version of PDD was provided.

Date: 07/03/2007 - comments by A. R. J. Esparta

New version of PDD was provided, excluding lines built without fully consideration of market variables, for example, lines with construction initiated either by the government or as a social counterpart in the privatization contract.

Date: 20/02/2007 – Aurea Nardelli

[Acceptance and close out]: NIR 2 is not closed out. Additional information is required:

- See also CARs 8 and 9.
- Please also clarify if the project activity has made use of incentives or special financing from “Luz para todos” or BNDES.
- Please clarify what was the EF applied for diesel. Two different values were verified on the spreadsheets provided: 2.68 tCO₂/m³ and 2.75 tCO₂/m³.

Date: 05/03/2007 – Aurea Nardelli

[Acceptance and close out]: NIR 2 was not closed out.

Information about the governmental programmes was included in the PDD.

It was confirmed that the EF applied for diesel is: 2.68 tCO₂/m³

See closing out details of CARs 8 and 9 (also related to the additionality discussion).

It is not provided conclusive evidence about Step 0: some transmission lines started the operation in June 2000. It is not evidenced that the construction of these lines was effectively performed after 1st January 2000.

Date: 08/03/2007 – Aurea Nardelli

[Acceptance and close out]: Version 4 of the PDD was provided. The additional information provided implied in the exclusion of the project the lines of CELPA and some lines of CEMAT which did not comply fully with the additionality criteria. It also implied in significant changes in the PDD and reduction of the total amount of ERs estimated for the project. NIR 2 was closed out.

Date: 05/01/2007

Issue

Raised by: Fabian Gonçalves

Data and parameters that are available at validation (section B.6.2 of the PDD) and Data and parameters monitored are not in compliance with AM0045.

Date: 23/01/2007 – comments by A. R. J. Esparta

- Spreadsheets with the complete calculations provided to the DOE.

- Version 2 of PDD was provided.

Date: 02/03/2007 - comments by A. R. J. Esparta

- New version of PDD provided to DOE with complete data.

Date: 20/02/2007 – Aurea Nardelli

[Acceptance and close out] : CAR 3 is not closed out.

PDD version 2 was verified. The parameters mentioned did not comply in full with those parameters required by the methodology as “data and parameters not monitored”. Some of them were included and other excluded, with out any justification. In addition, parameters 14 to 23 included in the PDD are highlighted in red on the text and their tables have been not completed (see section B.6.2).

Date: 05/03/2007 – Aurea Nardelli

[Acceptance and close out] : PDD version 3 described the parameters (to be monitored and that are available at validation) as required by the AM0045.

The calculation of EF grid was done applying the parameters defined by ACM0002. As the EF was calculated ex-ante, the parameters for this were included in the section B.6.2 (“parameters that are available at validation”). CAR 3 was closed out.

Date: 05/01/2007

Raised by: Fabian Gonçalves

No.	Type	Issue	Ref
4	CAR	<p>The average annual quantity of SF6 leaks in the equipments during years verified during site visit do not corresponds to the value presented in the PDD version 1.</p> <p>The area of land deforested in the construction of the interconnection lines verified during site visit do not corresponds to the value 130ha presented in the PDD version 1.</p> <p>Additional transmission losses estimated in the PDD (1%) should be</p>	4.3

according to the data
calculated by Cemat,
Celpa and Celtins.

Date: 23/01/2007 – comments by A. R. J. Esparta

- The average annual quantity of SF₆ leaks in the equipments during years verified during site visit do not corresponds to the value presented in the PDD version 1. The project's inventory indicates a total amount of around 113 kg of SF₆. The operating pressure of all equipments using SF₆ is checked annually and if necessary, i.e., if the operating pressure is below the minimum required, the equipment is recharged. The procedure is documented and archived in the companies' software management tool. During verification the documented charges will be used to determine $M_{SF_6, y}$. In the PDD $PE_{SF_6, y}$ is estimated assuming 10% leakage of the total amount of SF₆ yearly (11.3 kg or 0.0113 tonnes of SF₆).
- The area of land deforested in the construction of the interconnection lines verified during site visit do not corresponds to the value 130ha presented in the PDD version 1. Not all transmission lines demanded deforestation for its construction. When applicable, documented evidence of the deforested area (environmental impact assessment reports) are presented. Total area is equal to 580 hectares for CEMAT, 293 hectares for CELPA and no deforestation for CELTINS (total of 873 ha for the project activity).
- To review the additional transmission losses estimated in the PDD (1%) according to the data calculated by Cemat, Celpa and Celtins. Measured data and simulation were used to determine weighted average additional transmission losses in each subsystem (1.40% for CEMAT, 1.01% for CELPA and 1.00% for CELTINS).
- To review these data and present copy of the documents. Documentation on the above provided to the DOE.

Date: 31/01/2007 – Fabian Gonçalves

[Acceptance and close out] The average annual quantity of SF₆ was revised in the PDD version 2, copy of the maintenance procedure was provided and the internal system was verified. The PDD adopted a conservative 10% leakage. This data will be monitored and can be confirmed during verification process.

The deforested area can be confirmed by the environmental reports. Some lines were constructed beside the road or in previously deforested areas.

Each concessionary presented the calculation for the estimated transmission losses, copy was provided. CAR 4 was closed out.

Date: 31/01/2007

Raised by: Fabian Gonçalves

No.	Type	Issue	Ref
5	CAR	The local stakeholder consultation is required by Brazilian DNA Resolution (Resolução nº4, 6 dezembro 2006). It is necessary to send a letter to relevant stakeholders, before the validation process starts, if some letter is sent during validation process it is necessary to wait the 30 days period. Evidences that the following organizations were invited to comment on the CDM project were not provided: Cemat: local communities (Claudia, União do Sul, Marcelândia, Canarana, Sapezal, Juína, Juara, Tabaporã); Prefeitura and Secretaria	7.1

de Meio Ambiente (Juara); Ministério Público.

Celpa: local communities (Vizeu, Tucumã, São Félix); Câmara Vereadores (São Félix).

Celtins: local communities (Apinajé, Retiro, Lagoa do Tocantins, Mansinha, Mateiros, Trevo da Praia, Lizarda, São Félix, Centenário, Recursolândia); Câmara Vereadores (Príncipe, Mateiros).

Date: 02/02/2007 – comments by A. R. J. Esparta

Over 100 letters were sent in the beginning of January 2007. Few letters were sent to wrong places due to imprecision in official documents (ANEEL resolutions) and were re-sent in the beginning of February 2007.

Date: 05/03/2007 – Aurea Nardelli

[Acceptance and close out]: Documented evidences were provided to SGS regarding the letters sent to the local stakeholders. A period of 30 days was given for comments. The conclusion of the local consultation was included in the PDD (version 3).

CAR 5 was closed out.

Date: 15/02/2007

Raised by: Aurea Nardelli

No.	Type	Issue	Ref
6	CAR	<p>The project shall correctly complete a Project Design Document, using the current version and exactly following the guidance. The PDD shall address all the specific requirements under each header. If requirements are not applicable / not relevant, this must be stated and justified. It was verified that the PDD version 2 (23/01/2007) did not comply with the above-mentioned requirements. The main non-compliances identified are:</p> <ul style="list-style-type: none"> - Section A.4.1.3 and A.4.1.4: the information was presented, but under a wrong item. The detailed location with geographical coordinates was presented under A.4.1.3 and not under A.4.1.4. - Section A.4.3: accordingly to the guidelines, this section should include a description of how environmentally safe and sound technology, and know-how to be used, is transferred to the host Party(ies). No information about this was presented in the PDD under this header. - Section B.1: is not complete. It was not informed the methodologies or tools which the approved methodology draws upon and their version. - Section B.8: the date of completion of the application of the baseline study and monitoring methodology was not informed. - Annex 2: was excluded with no justification. - Annex 4: it was informed that the project applies “the procedures set by the “Approved consolidated monitoring methodology ACM0002”. No references to AM0045. 	1.6; 8.1.2

Date: 02/03/2007 – New version of PDD including the required information.

Date: 05/03/2007 – Aurea Nardelli

[Acceptance and close out]: A new version of PDD was provided (version 3). A clear link was included to relate the sections A.4.1.3 and A.4.1.4 (details were kept on section A.4.1.3); section A.4.3, B.1 and B.8 was completed with the information required; Annex 2 and 4 were revised. CAR 6 was closed out.

Date: 15/02/2007

Raised by: Aurea Nardelli

No.	Type	Issue	Ref
7	CAR	The project boundary should be consistent with the approved methodology. The Section B.3 (PDD version 2), the description of the sources and gases included in the project boundary was not complete, as required by AM0045 and was not presented as required by the guidelines.	2.2

Date: 05/03/2007 - New version of PDD including the required information

Date: 05/03/2007 – Aurea Nardelli

[Acceptance and close out]: Section B.3 (PDD version 3) was revised to include the information required about project boundary. CAR 7 was closed out.

Date: 15/02/2007

Raised by: Aurea Nardelli

No.	Type	Issue	Ref
8	CAR	The selected baseline shall represent the most likely scenario among other possible and/or discussed scenarios. The assessment of alternative scenarios present	3.3

ed in
the
PDD
version
2 did
not
comply
with
the
AM004
5
require
ments
(see
the 3
steps
of the
method
ology).
The
identific
ation of
barriers
was
only
mentio
ned
under
section
B.4 but
was
not
discuss
ed.

Date: 05/03/2007 – New version of PDD including the discussion of the alternative scenarios.

Date: 05/03/2007 – Aurea Nardelli

[Acceptance and close out]: CAR 8 is not closed out

PDD Section B.4: the discussion presented did not support the conclusion of "The presented barriers affect the Project Activity Scenario as well as all alternative scenarios similarly." It is required specify clearly which alternatives are prevented by at least one of the barriers previously identified and eliminate those alternatives from further consideration. The step 3 of the "Tool" should be used. PDD version 3 (sent on 05 March) only mentioned 3 references but did not provided any information or an open discussion about the

main issues related to the identified barriers, as required by AM0045 and the “Tool”.

Date: 08/03/2007 – Aurea Nardelli

[Acceptance and close out]: Version 4 of the PDD was provided, with more information of the alternative scenarios, following the steps defined by AM0045. Four scenarios were identified. The barrier analysis was complemented by investment analysis, performed as required by step 2 of the “Tool”. The investment analysis compared all the scenarios identified and confirmed the baseline scenario as the current situation. CAR 8 was closed out.

Date: 15/02/2007

Raised by: Aurea Nardelli

No.	Type	Issue	Ref
9	CAR	The PDD version 2 did not follow all the steps required in the methodology to determine the additionality. <ul style="list-style-type: none"> - Sub-step 1.(a): did not consider the alternative of the project be implemented without CDM incentives, as required by the “Tool”; - Sub-step 2 (c) and (d): were not clearly presented (the discussion of sub-step (c) was mixed with sub-step (b) and sub-step (d) was omitted. - Sub-step 4: it was not supported by any sources of data or references. - Sub-step 5: mentioned “barriers”, but no barriers analysis was presented in the PDD. 	3.1

Date: 05/03/2007 – New version of PDD including the discussion of the additionality.

Date: 05/03/2007 – Aurea Nardelli

[Acceptance and close out] – A new version of PDD was provided, including a discussion about additionality for the steps 1, 2, 4 and 5. The discussion followed the required approach for each step. CAR 9 was closed out.

Date: 15/02/2007

Raised by: Aurea Nardelli

No	Type	Issue	Ref
10	NIR	The PDD version 2 did not use accurate and reliable information	1.1 1

n that can be verified in an objective manner. Section B.6.3. mentioned that “The climatic zone of most of the project area is mostly classified as “savana arbórea aberta” according to Brazilian National Communication”. No complete references were provided about this source. It was also mentioned that “ $L_C = 15.39 \text{ tC/ha}$ ”, but the source of this value was not provided.

Date: 05/03/2007 – It was informed in the version 3 of PDD.

Date: 05/03/2007 – Aurea Nardelli

[Acceptance and close out]: The following reference was provided: “*Primeiro Inventário Brasileiro de Emissões Antrópicas de Gases de Efeito Estufa. Emissões e Remoções de Dióxido de Carbono Por Conversão de Florestas e Abandono de Terras Cultivadas.*”

Ministério da Ciência e Tecnologia, Brasília (2006)". This document was verified in order to confirm the information above. According to the reference, the vegetation of the area (define by geographical coordinates) is classified under the *bioma* "Amazonia". The sub-bioma (Savana-aberta) was classified from the environmental reports provided by the client (which characterize the vegetation under the transmission lines). NIR 10 was closed out.

Date: 15/02/2007

Raised by: Aurea Nardelli

No.	Type	Issue	Ref
11	CAR	Although information about the management system was verified on-site by the local assessor, the monitoring plan (section B.7.2 of the PDD) was not complete as required by the guidelines: <i>"provide a detailed description of the monitoring plan. Describe the operational and management structure that the project operator will implement in order to monitor emission reductions and any leakage effects generated by the project activity. Clearly indicate the responsibilities for and institutional arrangements for data collection and archiving"</i> .	5.2 and PDD guidelines

Date: 05/03/2007 – new version of PDD was provided.

Date: 05/03/2007 – Aurea Nardelli

[Acceptance and close out]: CAR 11 is not closed out

The PDD informs: "All data will be electronically archived at least during the whole crediting lifetime of the project"). CDM data and records should be archived for + 2 years after the end of the crediting period.

It was not informed in the PDD who will be responsible for calculations of CERs and preparing the monitoring reports for verification in the future.

Date: 05/03/2007 – Aurea Nardelli

[Acceptance and close out]: The PDD mentioned that "All necessary operational and management structures necessary to monitor emissions reductions and any leakage effects generated by the project activity are common practice in the operation of the Grupo Rede CDM Project. Furthermore, distribution of electricity in Brazil is a government concession and is regulated by the Brazilian Electricity Agency (ANEEL acronym from the Portuguese "Agência Nacional de Energial Elétrica"). Measurement methods and procedures carried out at Grupo Rede CDM Project are in accordance with legal and regulatory requirements determined by ANEEL (see ANEEL, Resolução Normativa No 163, de 1o de Agosto de 2005)." It was also included that data will be collected and consolidated by the special projects department of Grupo Rede (at the headquarter of the company in São Paulo), with the support of Ecoinvest Carbon, for the preparation of the monitoring reports. The archiving time was defined as the crediting period + 2 years.

Date: 15/02/2007

Raised by: Aurea Nardelli

No.	Type	Issue	Ref
12	CAR	The PDD version 2 did not provide complete information for the monitoring as required in the monitoring methodology and by the guidelines. Description of measurement methods and procedures were not complete. In the tables of section B.7.1 it was not specified, for	4.2/4.3 PDD guidelines

example, the measurement methods, the equipment, the procedures for data collection, the calibration procedures etc for each parameter to be monitored.

Date: 05/03/2007 – New version of PDD was provided.

Date: 05/03/2007 – Aurea Nardelli

[Acceptance and close out] : Additional information was included on the section B.7.1 and a reference to the regulatory requirements applicable for measurements was provided.

CAR 12 was closed out.

Observations:

- 1) To ensure more transparency, the information about environmental legal compliance (as the number, date and name of the agency which issued the environmental licenses for the project activity) should be presented in the PDD section D.1